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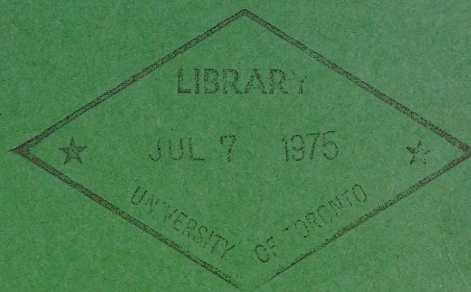




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# MODEL MUNICIPAL NOISE CONTROL BY-LAW

[General publications]  
[G-13]



Ontario

Ministry  
of the  
Environment

The Honourable  
William G. Newman,  
Minister

Everett Biggs,  
Deputy Minister







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Government  
Publications

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## INTRODUCTION

In 1971 when sound and vibration were defined as contaminants under The Environmental Protection Act, 1971, the Ministry of the Environment initiated studies of environmental noise and noise control. It was generally recognized that the federal, provincial and municipal governments each would have a role to play in an effective noise control program. During the past years, this Ministry has been intensively studying the noise control programs of other governments, the sources and nature of noises which give rise to complaints, measures of abating noises, background noise levels in various community settings and associated technical aspects of noise and noise measurement.

While there was an apparent desire on the part of many municipalities in Ontario to adopt noise control by-laws to meet municipal needs, the authority under The Ontario Municipal Act for such by-laws was too narrow to permit adequate scope. It was evident that many of the common sounds and vibrations giving rise to noise complaints were of a local community nature and could be effectively controlled at the municipal level. Accordingly, in the Fall of 1974, the Honourable William G. Newman, Minister of the Environment, announced that he would provide municipalities with adequate permissive legislative authority under The Environmental Protection Act to adopt a municipal noise control by-law and a model by-law. The amendment has been passed by the Legislature and will come into force on a day to be named by proclamation of the Lieutenant Governor. A draft of the Model Municipal Noise Control By-Law has been prepared and is presented for review and comment by municipalities and other interested groups and associations.

The draft by-law should be considered as a working paper. Specific dates have been set for discussion workshops for municipal representatives in each of the six regions of the Ministry. Arrangements are also being made to meet with other interested groups.



It is intended that the by-law meet the requirements of municipalities of all sizes, provide comprehensive control for most known sound and vibration problems, permit flexibility to meet local needs and resources and provide a unifying base for noise control across the Province. The prerogative for approval for a municipal noise control by-law is assigned to the Minister by the legislation.

The by-law consists of four parts supported by technical appendices.

Part I      Section 1 provides layman explanations and technical definitions for the terms used in the by-law.

Part II     Sections 2 through 8 deal with the appointment, certification, duties and authority of the Noise Control Officer and his relation to the municipal corporation.

Part III    Sections 9 through 22 include the prohibition and penalty provisions and provide details of what constitutes an "acoustic intrusion" in terms of a wide variety of sound sources and thereby sets limits in terms of noise levels.

Part IV     Section 23 deals with exemptions.

Appendices      The supporting material identifies Ministry publications which will constitute technical references for the by-law and schedules and tables of a technical nature.



A summary of the pertinent functions of the model municipal noise control by-law is provided for reference.

- 1) The by-law will permit a Municipal Council to exercise broad environmental noise control at the local level under the powers granted by The Environmental Protection Amendment Act, 1974.
- 2) Provision is made for the appointment of a municipal noise control officer for enforcement of the by-law.
- 3) The noise control officer may be assigned the following duties and authorities with respect to controlling noise:
  - (a) conduct studies, research and monitoring of noise levels,
  - (b) educate the public in abatement measures,
  - (c) co-ordinate the activities of all municipal employees,
  - (d) develop procedures to provide effective enforcement of the by-law,
  - (e) provide Council with such advice as it requires,
  - (f) develop a traffic map and noise zone map of the community,
  - (g) develop land use criteria,
  - (h) supervise municipal purchasing with regard to noise.
- 4) More sophisticated powers that may be assigned to the municipal noise control officer at the option of the Council are:
  - (i) authority to approve the acoustic properties of all new buildings and projects which may emit noise,



- (j) review land use proposals,
- (k) assess the noise insulation properties of all new construction,
- (l) control the occupation of new premises.

- 5) The by-law specifically prohibits or curtails some noise source activities in sensitive areas of the community at certain times of the day. Sources of acoustic intrusions (see definition, Section II) that are suggested for control in this way include:

all auditory signalling devices, loud speakers, street selling by outcry, loading and delivery, construction, discharge of firearms, animal noises, use of explosives, idling rail equipment on private property, car washes, all terrain vehicles, people noises, parties, gatherings, power tools, venting of high pressure gases.

- 6) The by-law prohibits outright acoustic intrusions emanating from:

tire squeal, braking noises, faulty mufflers, racing vehicles, miscellaneous vehicle noises, unwarranted idling.

- 7) Acoustic intrusions from the following sources are limited by noise level, and/or time of day and municipal zone:

air conditioners - domestic and commercial, power mowers and power tools, motorized conveyances, blasting and vibration, industrial and commercial noises.



- 8) The by-law fixes the maximum noise levels permitted in residential areas on the basis of the equivalent constant energy level. This dBA level takes into account periodic noise fluctuation that may cause annoyance.
- 9) Under the by-law, the Council may exempt any person from prosecution for many of these provisions for a period up to six months.
- 10) In relation to the Ministry, the by-law provides for:
  - (a) approval of the by-law or individual articles by the Minister,
  - (b) certification of the noise control officer by the Ministry,
  - (c) reporting on the program every three years to the Ministry,
  - (d) application of procedures and standards set out in publications of the Ministry and designated as suitable for the purposes of the by-law.

While the by-law is not as complex as it first appears, the Ministry is prepared to assist municipalities in the adoption and implementation of the by-law or parts thereof, with particular reference to technical training in relation to acoustic measurement and enforcement procedures.

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**BILL 190**

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4TH SESSION, 29TH LEGISLATURE, ONTARIO  
23 ELIZABETH II, 1974

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**An Act to amend  
The Environmental Protection Act, 1971**

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THE HON. W. NEWMAN  
Minister of the Environment

---

*1st Reading*

January 28th, 1975

*2nd Reading*

February 3rd, 1975

*3rd Reading*

February 6th, 1975

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TORONTO

PRINTED BY J. C. THATCHER, QUEEN'S PRINTER FOR ONTARIO





BILL 190

1974

**An Act to amend  
The Environmental Protection Act, 1971**

**H**ER MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

1. Subsection 1 of section 1 of *The Environmental Protection Act, 1971*, being chapter 86, as amended by the Statutes of Ontario, 1972, chapter 1, section 69 and 1972, chapter 106, section 1, is further amended by adding thereto the following clause:
 

(fa) "local municipality" means a city, town, village or township.
2. Subsection 1 of section 95 of the said Act is repealed and the following substituted therefor:
 

(1) Any regulation may be general or particular in its application, may be limited as to time or place or both and may exclude any place from the application of the regulation.
3. The said Act is amended by adding thereto the following section:
 

95a.— (1) The councils of local municipalities may, subject to the approval of the Minister, pass by-laws,

  - (a) regulating or prohibiting the emission of sounds or vibrations;
  - (b) providing for the licensing of persons, equipment and premises, or any of them, with respect to the emission of sounds or vibrations;
  - (c) prescribing maximum permissible levels of sounds or vibrations that may be emitted;

- (d) prescribing procedures for determining the levels of sounds or vibrations that are emitted,

and such a by-law may make different provisions for different areas of a local municipality and may make provision for exempting any person, equipment or premises from any provision of the by-law for such period of time and subject to such terms and conditions as may be set out or provided for in the by-law.

Adoption  
of codes in  
by-laws

(2) A by-law passed by the council of a local municipality pursuant to subsection 1 may adopt by reference, in whole or in part, with such changes as the council considers necessary, any code, formula, standard or procedure, and may require compliance with any code, standard or procedure so adopted.

Application  
of  
R.S.O. 1970,  
c. 284

(3) Part XXI of *The Municipal Act* applies to by-laws passed under this section.

s. 96,  
amended

4. Section 96 of the said Act is amended by adding thereto the following subsection:

Idem

(2) Subsection 1 does not apply in respect of section 95a and the enactment of section 95a or a by-law pursuant to section 95a does not affect the validity of an Act that is in force immediately before the coming into force of section 95a.

Commence-  
ment

5. This Act comes into force on a day to be named by proclamation of the Lieutenant Governor.

Short title

6. This Act may be cited as *The Environmental Protection Amendment Act, 1974* (No. 2).



MINISTRY OF THE ENVIRONMENT

MODEL MUNICIPAL NOISE

CONTROL BY-LAW

A By-law of the Corporation of

WHEREAS it is expedient to exercise the power conferred upon the Council by the Environmental Protection Act, 1971, as amended, and other statutory authority; and

WHEREAS excessive noise or vibration is a serious hazard to the public health and welfare and the quality of life; and

WHEREAS a recognized body of scientific and technological knowledge exists by which excessive noise or vibration may be substantially reduced; and

WHEREAS people have a right to and should be ensured an environment free from unusual, unnecessary, excessive or disturbing noise or vibration that may jeopardize their health or welfare, degrade the quality and tranquility of their life or cause nuisance; and

WHEREAS it is the policy of the Council to reduce and control such noise or vibration;

NOW THEREFORE, the Council of the Corporation of  
enacts as follows:

FIRST DRAFT

NPCS MAR. 1975 2,000

1(1) Technical Terms

All the words and phrases used in this by-law which are of a technical nature and are related to sound or vibration, and whether or not they are described hereunder shall, for the purposes of this by-law, have the meanings specified for them in Publication NPC. 101, but as an aid in understanding the by-law, the following descriptions of technical terms are included herein:

(a) 'A' Weighted Sound Pressure Level

The "'A' weighted sound pressure level" is the sound pressure level as determined using the 'A' weighting. The unit of measurement is the 'A' weighted dB, which is denoted "dBA".

(b) Decibel

"Decibel" is a dimensionless unit of measurement. It is denoted "dB".

(c) Equivalent Sound Level

The "equivalent sound level", sometimes denoted "Leq", is the value of the constant sound level which would result in exposure to the same total energy as would the monitored sound, if the constant level persisted over the same period. It is measured in dBA.

(d) Octave Band

An "octave band" is a continuous range of frequencies in which the highest frequency is twice the lowest frequency. A system of preferred octave bands has been established for use in acoustic procedures.

(e) Overpressure

The "overpressure" at a point due to an acoustic disturbance is the instantaneous difference at that point between the atmospheric pressure during the disturbance and the prevailing atmospheric pressure in the absence of the disturbance. The unit of measurement is the pascal. One pascal denoted "Pa", is the same as one Newton per square metre.



(f) Overpressure Level

The "overpressure level" is twenty times the logarithm to the base 10 of the ratio of the overpressure to the reference pressure of  $20\mu\text{Pa}$ .

(g) Percentile Sound Level

The "X percentile sound level", denoted  $L_x$ , is the sound level exceeded X percent of the time during a specified time period. It is measured in dBA.

(h) Sound Level

"Sound level" is the 'A' weighted sound pressure level.

(i) Sound Level Meter

A "sound level meter" is an instrument that is sensitive to, and calibrated for, the measurement of sound pressure fluctuations.

(j) Sound Pressure

The "sound pressure" at a point is the instantaneous difference between the actual pressure and the average or barometric pressure at the point. The unit of measurement is the micro-pascal, which is denoted " $\mu\text{Pa}$ ".

(k) Sound Pressure Level

The "sound pressure level" is twenty times the logarithm to the base 10 of the ratio of the sound pressure of a sound to a reference pressure, which is usually  $20\mu\text{Pa}$ . The unit of measurement is the dB.

(l) Vibration

"Vibration" is a temporal and spatial oscillation of displacement, velocity or acceleration in a solid medium.

1(2) Definitions

In this by-law:

(a) Certificate

"Certificate" means a Certificate of Competency in Acoustic Technology of a specified class issued by the Minister of the Environment.

(b) Construction

"Construction" has the same meaning as in the Construction Safety Act 1973, S.O. 1973, Chapter 47.

(c) Construction Equipment

"Construction equipment" means any equipment or device designed and intended for use in construction, including, but not limited to air compressors, pile drivers, pneumatic or hydraulic tools, bulldozers, tractors, excavators, trenchers, cranes, derricks, loaders, scrapers, pavers, generators, off-highway haulers or trucks, ditchers, compactors and rollers, pumps, concrete mixers, graders, or material handling equipment.

(d) Construction Site

"Construction site" means an area within which construction is confined, including the defined boundary lines of the construction project and any area outside those defined boundary lines used expressly for the construction or purposes related thereto.

(e) Conveyance

"Conveyance" includes a vehicle and any other device employed to transport a person or persons or goods from place to place but does not include any such device or vehicle if operated only within a building.

(f) Council

"Council" means the Council of the Corporation of the Municipality of \_\_\_\_\_.

(g) Highway

"Highway" has the same meaning as in The Highway Traffic Act.

(h) Minister

"Minister" means the Minister of the Environment.

(i) Motor Vehicle

"Motor vehicle" has the same meaning as in The Highway Traffic Act.

(j) Motorized Conveyance

"Motorized conveyance" means a conveyance propelled or driven otherwise than by muscular, gravitational or wind power.

(k) Municipality

"Municipality" means the land within the geographic limits of the Municipality of \_\_\_\_\_.



(1) Noise

"Noise" means unwanted sound.

(m) Point of Reception

"Point of reception" means any point on the premises of a person where sound or vibration originating other than on those premises is received and also any point in a public place where sound or vibration is received.

(n) Publication

"Publication" means a specified publication of the Noise Pollution Control Section of the Pollution Control Planning Branch of the Ministry of the Environment, as amended from time to time, which appears listed in the Schedule hereto.

(o) Public Place

"Public place" has the same meaning as in The Liquor Control Act.

(p) Vehicle

"Vehicle" has the same meaning as in The Highway Traffic Act.

1(3) Procedures and Standards

Any test or measurement to be made pursuant to this by-law shall be made in accordance with applicable procedures and standards approved in or appearing in Publication NPC 103 and Publication NPC 104 respectively.

1(4) Severability

If a court of competent jurisdiction should declare any section or part of a section of this by-law to be invalid, such section or part of a section shall not be construed as having persuaded or influenced Council to pass the remainder of the by-law and it is hereby declared that the remainder of the by-law shall be valid and shall remain in force.

2 Noise Control Officer

Council will designate a Noise Control Officer to administer this by-law. The Noise Control Officer shall possess a valid Class 3 Certificate. With the approval of Council, the Noise Control Officer may engage the services of such assistants and such investigative personnel, as he considers necessary. An Assistant Noise Control Officer shall possess a valid Class 2 Certificate and a Noise Control Investigator shall possess a valid Class 1 Certificate.

3(1) Municipal Action

Every municipal officer, servant and employee shall, to the fullest extent consistent with his authority, carry out his municipal responsibilities in such a manner as to further the policy of noise reduction and control embodied in this by-law.

3(2) Co-operation

Every municipal officer, servant and employee shall co-operate with the Noise Control Officer to the fullest extent in enforcing this by-law.

3(3) Compliance with other Laws

Every municipal officer, servant and employee shall perform his municipal duties in such a way as to comply with every applicable statute, law, ordinance, regulation and order relating to noise, including this by-law.

3(4) Municipal Employees

If at any time the Noise Control Officer believes, on reasonable grounds, that a municipal officer, servant or employee is setting or enforcing standards or otherwise performing his duties not in conformance with the policy of noise reduction and control embodied in this by-law, he may require such person to consult him as to the manner in which this by-law and the policy embodied herein relate to the duties of such person.



3(5) Project Approval

No municipal officer, servant or employee shall issue or grant any exemption, permit, licence or approval for any new work or undertaking or any change in an existing work or undertaking, when such work or undertaking or such change may result in the emission of noise, without first consulting the Noise Control Officer.

4(1) Building Permits

No municipal officer, servant or employee shall issue or grant any exemption, permit, licence or approval for any construction to be done in connection with a proposed or existing building, without first either obtaining the written approval of the Noise Control Officer or being supplied by the applicant with the written approval of Council.

4(2) Approval of Noise Control Officer

The Noise Control Officer shall not provide the written approval mentioned in subsection 1 until and unless he is provided with evidence satisfactory to himself that, at any point on the proposed site of a new building or of an alteration to an existing building, including any point above ground which will be occupied by the proposed building or alteration, the sound criteria specified in Publication NPC 105 shown as applicable to that type of building are met.

4(3) Approval of Noise Control Officer

The Noise Control Officer shall not provide the written approval mentioned in subsection 1 until and unless he is provided with evidence satisfactory to himself that both the acoustical considerations incorporated into the building plans and also the specifications of the noise insulation materials and techniques intended to be incorporated into the building or the construction of the building are in accordance with the relevant provisions of the National Building Code and the Ontario Building Code and Publication NPC 106.

5(1) Occupation

No municipal officer, servant or employee shall issue or grant any exemption, permit, licence or approval which authorizes the occupation or use of any building for which approval was required under subsection 1 of section 4 unless he is provided either with a further written approval as to the occupation or use of the building from the Noise Control Officer or with the written approval of Council obtained by the applicant.

5(2) Approval of Noise Control Officer

The Noise Control Officer shall not provide the approval to occupy or use, mentioned in subsection 1 until and unless he is provided with evidence satisfactory to himself that the building has been constructed in accordance with the plans and specifications mentioned in subsection 3 of section 4 and, for the purposes of this subsection, the building shall be deemed to have been constructed in accordance with the aforesaid plans and specifications if any deviations from the plans and specifications incorporated in the construction of the building would have been acceptable to the Noise Control Officer for the purposes of subsection 3 of section 4 had such deviations been included in the plans and specifications submitted to him for such purposes.

Approval of Council

6 The written approval of Council mentioned in subsection 1 of section 4 or subsection 1 of section 5 may be sought only by the making of an application for an exemption and section 23 applies mutatis mutandis.

7(1) Contracts

The municipal officer, servant or employee responsible shall consider the advisability of including in any written agreement, including a purchase order or other document, by which the Municipality may be committed to the expenditure of funds in return for goods or services, or both, a condition that violation of this by-law by any party to the agreement, other than the Municipality in the course of fulfilling the terms of the agreement, will render the agreement voidable at the option of the Municipality.



7(2) Low Noise Emission Products

In all work undertaken for or on behalf of the Municipality and in all agreements for work to be performed for the Municipality or for the acquisition of machinery or equipment by the Municipality, it shall be required that due consideration be given to the sound level produced by any such machinery or equipment to be used or acquired, as specified in Publication NPC 107, as well as to the other specifications thereof.

8(1) Powers of Noise Control Officer

In order to further the policy of this by-law the Noise Control Officer has the power to:

(a) Studies

Conduct or cause to be conducted studies, research, and monitoring related to noise.

(b) Education

Conduct programs of public education regarding the causes and effects of noise and encourage the participation of the public in such programs.

(c) Co-ordination and Co-operation

Co-ordinate the noise control activities of all municipal officers, servants and employees and co-operate with municipal, provincial or federal agencies to further the policy embodied in this by-law.

(d) Recommend Contracts

Where appropriate, recommend that the Municipality enter into contracts for obtaining necessary technical or enforcement services.

(e) Project Reviews

Consult with other municipal officers, servants and employees for the purposes of this by-law.

(f) Reports

Make such reports to Council concerning his duties and matters related to noise and this by-law as he sees fit or as Council may require.

(g) Consultation

Consult the Noise Pollution Control Section of the Pollution Control Planning Branch of the Ministry of the Environment with respect to any matter relating to his duties or the enforcement of this by-law.

8(2) Duties of Noise Control Officer

In order to further the policy embodied in this by-law the Noise Control Officer is required to:

(a) Enforcement Procedures

Develop administrative procedures which will provide for effective enforcement of this by-law.

(b) Recommendations

Recommend changes to this by-law so that it is not in conflict with related federal or provincial legislation or regulations and so that it is consistent with developments in acoustical technology.

(c) Advice

Provide Council with such advice as it requires for its deliberations with respect to the acoustical aspects of any matter.

(d) Traffic Map

Develop or cause to be developed a map of the Municipality showing patterns of traffic flow for the purpose of advising Council in its deliberations with respect to the regulation of traffic and making recommendations to Council in that regard.

(e) Sound Level Map

Develop or cause to be developed a sound level map of the Municipality. A copy of such map when first prepared and after each updating, at least once in every three years, shall be delivered to the Minister. The techniques employed in developing such a map shall be consistent with and at least as accurate as those techniques set out in Publication NPC 109.

(f) Periodic Reports

Meet, at least once every three calendar years, with the designate of the Minister and discuss with him the techniques employed in the preparation of the sound level map of the Municipality, acoustical matters shown on the municipal sound level map or otherwise, and other matters relating to the duties of the Noise Control Officer and the enforcement of this by-law.



(g) Record Keeping

Keep such records with respect to complaints of noise and the enforcement of this by-law and make such annual returns to the Minister as are specified in Publication NPC 111.

(h) Instrumentation

Procure, maintain and utilize such instruments and related equipment as are necessary in the fulfillment of his duties and the enforcement of this by-law, provided that such instruments and related equipment, if of a type listed in Publication NPC 112, meet the specifications therein set out.

(i) Standards

Determine the procedures and standards most suitable for the fulfillment of the duties of the Noise Control Officer and the enforcement of this by-law, selected from the procedures and standards approved in, or appearing in Publication NPC 103 and Publication NPC 104 respectively, and designated therein as suitable for the purposes of this by-law.

9 Prohibition

No person shall make or continue or cause or permit to be made or continued any sound or vibration which,

- (i) is such that it does, or is likely to, annoy, inconvenience or disturb the inhabitants or any of them, or
  - (ii) adversely affects the health or welfare of the inhabitants or any of them, or
  - (iii) is an acoustic intrusion or vibratory intrusion as specified herein,
- except that sound or vibration caused during an emergency
- a) for the immediate health, safety or welfare of the inhabitants or any of them, or
  - b) for the preservation or restoration of property,
- is not subject to this prohibition unless it is clearly of a longer duration, or nature more disturbing, than is reasonably necessary for the accomplishment of such emergency purpose.

10 Penalty

Every person who contravenes any of the provisions of section 9 is guilty of an offence and shall, upon conviction thereof, forfeit and pay a penalty of not less than \$50.00 nor more than \$1,000.00 for a first offence and not less than \$100.00 and not more than \$1,000.00 for a second or subsequent offence, exclusive of costs and every such fine is recoverable under The Summary Convictions Act.

11 Acoustic Intrusion

The sound caused by each of the following acts is an acoustic intrusion if clearly audible at a point of reception in those areas of the Municipality specified in Table A during those times indicated:

11 (a) Auditory Signalling Devices

The operation of any auditory signalling device, including but not limited to the ringing of bells or gongs and the blowing of horns or sirens or whistles, or the production, reproduction or amplification of any similar sounds by electronic means, unless required or specifically permitted by law, or not in excess of the maximum permissible sound levels specified in section 19.

(b) Loudspeakers

The operation of any electronic device or group of connected electronic devices, incorporating one or more loudspeakers or other electro-mechanical transducers, and intended for the production, reproduction or amplification of sound, unless not in excess of the maximum permissible sound levels specified in section 19.

(c) Street Sales

Selling or advertising anything by shouting or outcry or amplified sound.

(d) Loading and Deliveries

Loading, unloading, delivering, packing, unpacking, or otherwise handling any containers, products, materials, or refuse, whatsoever, when done for profit.

(e) Construction

The operation of any construction equipment.

(f) Explosives

The setting off of fire-works or explosive devices.

(g) Firearms

The discharge of firearms.

(h) Powered Models

The operation of a combustion engine which,

(i) is, or

(ii) is used in, or

(iii) is intended for use in,

a toy or model or replica of a larger device, which model or replica has no function other than amusement and which is not a conveyance.



(i) Idling of Locomotives and Rolling Stock

The operation of any powered rail car, including but not limited to refrigeration cars, locomotives or self-propelled passenger cars, while stationary on property not owned or controlled by a railway governed by the Canada Railways Act.

(j) Car Washes

The operation of any commercial car wash or car wash system or any part thereof.

(k) Off-Road Conveyances

The operation of any motorized conveyance other than on a highway.

(l) People Noise

Yelling, shouting, hooting, whistling, singing and the holding of parades, processions or gatherings.

(m) Tools and Equipment

The use or operation of any device, including any powered or nonpowered tool, or item of machinery or equipment, other than a device to which section 16 applies, by an inhabitant or his agent for the domestic purposes of such inhabitant, unless not in excess of the maximum permissible sound levels specified in section 19.

(n) Musical Instruments

The playing of any band and of any musical instrument except by a military band attached to any regular corps of the militia of Canada, when on duty, under the command of its regular officer.

(o) Venting

The venting, release or pressure relief of air, steam or other gaseous material, product or compound from any autoclave, boiler, pressure vessel, pipe, valve, machine, device or system, unless not in excess of the maximum permissible sound levels specified in section 19.

(p) Repairs and Testing

Repairing, rebuilding, modifying or testing any motorized conveyance or motor or engine or device powered by a motor or combustion engine.

Acoustic Intrusion

The sound mentioned in each of the following clauses is an acoustic intrusion if clearly audible at a point of reception:

(a) Animals

The sound made by any animal including any bird if such sound persists for a period of time in excess of one half hour between 08:00 and 22:00 hours of one day or persists for a period of time in excess of 15 minutes between 22:00 hours of one day and 08:00 hours of the following day.

(b) Construction Sound Control Devices

The sound produced by the operation of any construction equipment when operated without sound control devices or with sound control devices less effective in reducing the level of sound emitted than the best sound control devices available at the time of the first purchase of the equipment, as specified by the original equipment manufacturer or as designated in Publication NPC 113 as an acceptable substitute.

(c) Racing

The sound produced by the operation of any motorized conveyance in a racing event, unless the conduct of the racing event is regulated by law.

(d) Tire Squeal

The squealing of tires on a motor vehicle.

(e) Vehicle Braking

The squealing or screeching sound produced by the operation of the brake mechanism of a motor vehicle on a highway.

(f) Muffler

The sound produced by the operation of any combustion engine, except one to which clause (h) of section 11 applies, without an effective muffling device in good working order and in constant operation.

(g) Miscellaneous Vehicular Noise

The banging, clanging, rattling or other like sound coming from a vehicle or the load on a vehicle or the trailer of a vehicle or the load on such trailer, unless operated on road surfaces which are not in good repair.

(h) Idling of Motor Vehicles

The sound produced by the operation of any engine or motor in or on any motor vehicle or attached auxiliary equipment for a continuous period exceeding five minutes, while such vehicle is stationary in a residential or commercial area as designated in the zoning by-law No. \_\_\_\_\_ unless:

- (i) the vehicle is in an enclosed structure constructed so as to effectively prevent excessive noise emission; or
- (ii) the original equipment manufacturer specifically recommends a longer idling period for normal and efficient operation of the motor vehicle in which case such recommended period shall not be exceeded; or
- (iii) operation of such engine or motor is essential to a basic function of the vehicle or equipment, including but not limited to, operation of ready-mixed concrete trucks, lift platforms or refuse compactors and heat exchange systems; or
- (iv) weather conditions justify the use of heating or refrigerating systems powered by the motor or engine for the safety and welfare of the operator or passengers; or
- (v) prevailing low temperatures make longer idling periods necessary, immediately after starting the motor or engine; or
- (vi) the idling is for the purpose of cleaning and flushing the radiator and associated circulation system for seasonal change of antifreeze, cleaning of the fuel system, carburetor or the like, when such work is performed other than for profit.



13

Excitation

The sound or vibration produced by the use or operation of any machine, device, vessel, process or thing is an acoustic intrusion if such sound or vibration causes any other machine, device, vessel or thing to vibrate in such a way that it produces sound which is an acoustic intrusion.

14

Construction Equipment

The sound produced by the operation of any construction equipment at a construction site any part of which is located within 600 metres of premises which are normally used for residential, commercial or industrial purposes or for the keeping of animals, or within 600 metres of any part of a Quiet Zone as specified in Table A, is an acoustic intrusion if it exceeds the applicable sound levels set out in Publication NPC 115 for the specific type of equipment, when tested in accordance with the procedures indicated therein.

15

Air Conditioners

The sound produced by the operation of residential air conditioning equipment including but not limited to, through-the-wall, split central, unitary central, and heat pump installations, is an acoustic intrusion if it produces a sound level which exceeds the limit set out in Publication NPC 116 when measured at a point of reception.

16

Domestic Power Tools

The sound produced by the use or operation of any device, including any tool or item of machinery or equipment, which device is powered by an electric motor or an internal combustion engine, by an inhabitant or his agent for the domestic purposes of such inhabitant, is an acoustic intrusion if such device produces a sound level which exceeds the limit applicable to that type of device, set out in Publication NPC 117, when measured at a point of reception.

17      Motorized Conveyances

The sound produced by any motorized conveyance is an acoustic intrusion if the sound level produced by the operation of the conveyance or of the motor or engine of the conveyance, when subjected to any test shown in Publication NPC 118 as applicable to that type of conveyance or motor or engine, exceeds the sound level indicated therein.

18(1)   Blasting, Overpressure

The concussion (air blast) produced by a blasting operation is an acoustic intrusion if the peak overpressure level resulting from such operation, when measured at any point within 100 metres of any residential premises, exceeds the limit specified in Publication NPC 119.

18(2)   Blasting, Ground Vibration

The vibration produced by a blasting operation is a vibratory intrusion if the ground vibration velocity exceeds the limit specified in Publication NPC 119 when measured at any point within 100 metres of any residential premises.

19(1)   Sound Level Limits

The sound from a source is an acoustic intrusion if, when measured at a point of reception, the sound level of the sound exceeds the maximum permissible level set out in Table B, adjusted in accordance with Publication NPC 120, indicated as applicable to that part of the Municipality in which and the time of day at which the sound is measured.

19(2)   Sound Pressure Level Limits

The sound from a source is an acoustic intrusion if, when measured at a point of reception, the octave band sound pressure level of the sound in any octave band exceeds the octave band sound pressure level for the same octave band set out in Publication NPC 120 and indicated as applicable with respect to that maximum permissible sound level established and used in subsection 1.

19(3) Impulse Sound Level Limits

The sound from a source is an acoustic intrusion if it is of an impulse nature and, when measured at a point of reception, the impulse sound level of the sound exceeds the maximum permissible level set out in Publication NPC 124 indicated as applicable to the time of day at which the sound is measured.

19(4) Exceptions

This section does not apply to sound from sources mentioned in sections 14, 15, 16 or 18.

20 Multiple Sources

The sound from a source is an acoustic intrusion if:

- (i) the resultant sound from the source in question and one or more additional sources, when measured at a point of reception common to all of the said sources, would be an acoustic intrusion under the provisions of section 19 if it were applicable, and
- (ii) the sound from no one of the said sources is an acoustic intrusion under the provisions of section 19, and
- (iii) the person in apparent charge or control of the source in question failed to forthwith reduce the level of sound coming from the source when he and those persons in apparent charge or control of the said sources of sound were all asked to do so by the Noise Control Officer.

21 Sound Within Buildings

The sound audible within a dwelling unit caused by sound or vibration transmitted through the ground or the structure of a building or both, is an acoustic intrusion if the sound pressure level of such sound in any octave band exceeds the greater of,

- (i) the applicable values listed in Publication NPC 121, and
- (ii) the normal sound pressure levels prevailing within the dwelling unit.

22 Vibration

The vibration produced by the use or operation of any machine, device, vessel, process or thing is a vibratory intrusion if such vibration exceeds the limits set out in Publication NPC 123 when measured at a point of reception.



23(1) Exemptions

Notwithstanding anything contained in this by-law, any person may make application to Council to be granted an exemption from any of the provisions of section 9 of this by-law with respect to any source of sound or vibration for which he might be prosecuted in accordance with such section and Council, by resolution, may refuse to grant any exemption or may grant the exemption applied for or any exemption of lesser effect and any exemption granted shall specify the time period during which it is effective and may contain such terms and conditions as Council sees fit.

23(2) Application

The application mentioned in subsection 1 shall be made in writing, in duplicate, and shall contain:

- (a) the name and address of the applicant,
- (b) a description of the source of sound or vibration in respect of which exemption is sought,
- (c) a statement of the provision or provisions of section 9 from which exemption is sought, including if applicable a reference to the one or more sections, subsections or clauses which specify the source of sound or vibration as an acoustic or vibratory intrusion,
- (d) the period of time, of a duration not in excess of six months for which the exemption is sought,
- (e) the reasons why the exemption should be granted,
- (f) a statement of the steps, if any, planned or presently being taken to bring about compliance with the by-law, and
- (g) proof of publication within the preceding ten days, in a newspaper of general circulation within the Municipality, of a notice of intention to apply for an exemption to this by-law, containing the information required by clauses (a) through (e) hereof, and further stating the date upon which it is intended that application will be made to Council.

23(3) Noise Control Officer

Council shall cause one copy of the application for exemption to be delivered to the Noise Control Officer and shall require him to prepare a report to Council forthwith, stating his opinion of the merits of the application and his recommendations as to terms and conditions which, in his opinion, should be imposed upon the applicant if the exemption is granted and Council will not consider the application for exemption until it has received the report of the Noise Control Officer.

23(4) Report

The Noise Control Officer shall forward a copy of his report to the applicant at the address shown on the application by prepaid registered mail and shall, not sooner than two weeks after the mailing of the report to the applicant, submit the report to Council and shall, on request, make his report available for public inspection.

23(5) Decision

In deciding whether to grant the exemption, Council shall consider the application, the report of the Noise Control Officer, and any written submission then received by Council made by the applicant after receipt of the report of the Noise Control Officer and the Council may consider such other matters as it sees fit.

23(6) Breach

Breach by the applicant of any of the terms or conditions of the exemption shall render the exemption null and void.

## SCHEDULE

<u>Number</u>	<u>Publication Title</u>	<u>Reference</u>
NPC 101	Definitions	1(1)
NPC 102	Certificate	1(2)(a)
NPC 103	Procedures	1(3) & 8(2)(i)
NPC 104	Standards	1(3) & 8(2)(i)
NPC 105	Land Use Criteria	4(2)
NPC 106	Building Acoustical Insulation & Planning	4(3)
NPC 107	Noise Emission From Products	7(2)
NPC 108	Traffic Map	8(2)(d)
NPC 109	Sound Level Map	8(2)(e)
NPC 110	Periodic Reports	8(2)(f)
NPC 111	Record Keeping and Annual Returns	8(2)(g)
NPC 112	Instrumentation	8(2)(h)
NPC 113	Construction Sound Control Devices	12(b)
NPC 114	Mufflers	12(f)
NPC 115	Construction Equipment	14
NPC 116	Air Conditioners	15
NPC 117	Domestic Power Tools	11 (m) & 16
NPC 118	Motorized Conveyances	17
NPC 119	Blasting	18
NPC 120	Sound Level Limits	19
NPC 121	Sound Within Buildings	21
NPC 122	Tires and Wheels	12(d) & 17
NPC 123	Vibration	22
NPC 124	Impulse Sounds	19 (3)
NPC 125	Guideline on Duties of Noise Control Officer	8
NPC 126	Guideline on Aircraft Noise	
NPC 127	Guideline on Very Low Frequency Sound and Vibration Measurement	
NPC 128	Guideline on General Procedures	
NPC 129	Guideline on Selection of Zones	11, 14 & 19
NPC 130	Guideline on Transportation Noise	



TABLE A (Example)

TIME RESTRICTIONS FOR SECTION 11

Subsections		Quiet Zone	Residential Land Use	All other Areas
11(a)	Auditory signalling devices	At any time	A - B & C	A - B
11(b)	Loudspeakers	At any time	X - Y & C	
11(c)	Street sales	At any time	X - Y & C	
11(d)	Loading and delivery	X - Y	X - Y & C	
11(e)	Construction Equipment	A - B	A - B & C	
11(f)	Explosives	At any time	X - Y & C	A - B
11(g)	Firearms	At any time	X - Y & C	A - B
11(h)	Powered models	At any time	X - Y & C	A - B
11(i)	Idling of locomotives and rolling stock	At any time	A - B & C	
11(j)	Car washes	At any time	A - B & C	
11(k)	Off road conveyences	At any time	A - B & C	
11(l)	People Noise	At any time	A - B & C	
11(m)	Tools & equipment	At any time	A - B & C	
11(n)	Musical instruments	At any time	A - B & C	
11(o)	Venting	At any time	X - Y & C	
11(p)	Repairs and testing	At any time	X - Y & C	A - B

NOTE: 1) A suggested restricted time may be - A-B = 22:00 hrs One Day, 07:00 hrs Next Day  
2) " " " " " " X-Y = 17:00 " " " , 10:00 " "  
3) " " " " " " C = all day Sundays and statutory holidays

TABLE B (EXAMPLE)

SOUND LEVEL LIMITS

RESIDENTIAL AREA DESCRIPTION	SOUND LEVEL LIMIT dBA		
	"Night"	"Evening"	"Day"
Residences in sparsely populated area; distant from population centres; environment dominated by natural sounds (people and/or animals).	40	45	45
Semi-rural small community; several miles from major throughway; no industrial or commercial activity.	45	50	50
Small or suburban community; no major through streets; sound environment dominated by distant traffic; recreational activity; occasional train, boat or light aircraft.	48	52	55
Suburban or urban residential community; close to transportation corridor; some commercial or light industrial activity; close to recreational areas; some intrusions due to light aircraft.	50	55	60
Residential community adjacent to busy streets, related to commercial activity, or large industry.	55	60	65

NIGHT: 23:00 - 07:00 hours, all day Sunday and statutory holidays.

EVENING: 19:00 - 23:00 hours

DAY: 07:00 - 19:00 hours

Publication NPC 101Definitions1. Technical Terminology and Standards

The following definitions and standards shall be used for the purposes of Municipal Noise By-Laws and all Publications of the Noise Pollution Control Section of the Pollution Control Planning Branch of the Ministry of the Environment and the definition of any technical word used in such By-Law or this or any such Publication and not herein defined shall be the definition appearing in the applicable Publication of the Canadian Standards Association (CSA), if such exists, or, if no such CSA definition exists, then the definition appearing in the applicable Publications of: The American National Standards Institute (ANSI), the International Organization for Standardization (ISO), the International Electro-Technical Commission (IEC), the Society of Automobile Engineers (SAE), the Compressed Air and Gas Institute (CAGI), the European Committee of Manufacturers of Compressed Air Equipment (PNEUROP), or their successor bodies.

1 (1) 'A' Weighting

'A' Weighting is the frequency weighting characteristic specified in CSA Z107.1 and intended to approximate the relative sensitivity of the normal human ear to different frequencies of sound.

1 (2) Band Pressure Level

The band pressure level of a sound for a frequency band is the sound pressure level of the sound within that frequency band.



1 (3) Beats (Beating)

Beats are the characteristic of a sound which has a cyclically varying sound pressure level.

1 (4) Decibel

(See Sound Pressure Level)

1 (5) Effective Sound Pressure

The effective sound pressure at a point is the root-mean-square value of the instantaneous sound pressure, over a time interval, at the point under consideration as detected with instrumentation meeting the specifications of CSA Z107.1.

1 (6) Equivalent Sound Level

The 'equivalent sound level' sometimes designated as ' $L_{eq}$ ' is the value of the constant sound level which would result in exposure to the same total energy as would the monitored sound, if the constant sound level persisted over the same time interval. It is measured in dBA.

1 (7) Fast Response

Fast response is a dynamic characteristic setting of a sound level meter or other reading device, meeting the applicable specifications of CSA Z107.1.

1 (8) Frequency

The frequency of a periodic quantity is the number of times that the quantity repeats itself in a unit interval of time, measured in herz (Hz) which is the same as cycles per second. The frequency is the reciprocal of the period.

1 (9) Frequency Band

A frequency band is a specified continuous range of frequencies.

1 (10) Impulse Response

Impulse response is a dynamic characteristic setting of a sound level meter meeting the applicable specifications of Publication IEC 179A, supplement to IEC 179.

1 (11) Impulse Sound

An impulse sound is a single pressure pulse or a single burst (multiple pressure pulses) as defined by IEC 179A, supplement to IEC 179, Sections 3.1 and 3.2.

1 (12) Impulse Sound Level

The impulse sound level is the sound level of an impulse sound. The unit of measurement is designated dBAI.

1 (13) Impulse Sound Pressure Level

The impulse sound pressure level is the sound pressure level of an impulse sound. The unit of measurement is the dB.

1 (14) Impulse Sound Level Meter

An impulse sound level meter is a sound level meter which has an impulse response setting.

1 (15) Octave Bands, One Third Octave Bands and their Centre Frequencies

Octave bands, one third octave bands and their centre frequencies shall be as specified in CSA Z107.1.

1 (16) Overpressure

The "overpressure" at a point due to an acoustic disturbance is the instantaneous difference at that point between the atmospheric pressure during the disturbance and the prevailing atmospheric pressure in the absence of the disturbance. The unit of measurement is the pascal. One pascal, abbreviated Pa, is the same as one newton per square metre.

1 (17) Overpressure Level

The "overpressure level" is twenty times the logarithm to the base 10 of the ratio of the overpressure to the reference pressure of 20  $\mu\text{Pa}$ .

1 (18) Percentile Sound Level

The X percentile sound level designated  $L_x$  is the sound level exceeded X percent of a specified time period. It is measured in dBA.

1 (19) Period

The period is the smallest increment of time in which a recurring phenomenon repeats itself (see Frequency).

1 (20) Pure Tone or Narrow Band of Energy

A pure tone or narrow band of energy is any sound which can be distinctly heard as a single pitch or a set of single pitches.

1 (21) Slow Response

Slow response is a dynamic characteristic setting of a sound level meter or other reading device meeting the applicable specifications of CSA Z107.1.

1 (22) Sound

Sound is an oscillation in pressure, stress, particle displacement or particle velocity, in a medium with internal forces (e.g. elastic, viscous), or the superposition of such propagated oscillations, which may cause an auditory sensation.

1 (23) Sound Level

The sound level is the weighted sound pressure level obtained by the use of the 'A' weighting network of a sound level meter. The unit of measurement is denoted dBA.



1 (24) Sound Level Meter

A sound level meter is an instrument, that is sensitive to and calibrated for the measurement of sound and which meets the specifications of CSA Z107.1 for type 1 or type 2 meters only.

1 (25) Sound Pressure

The sound pressure is the instantaneous difference between the actual pressure and the average or barometric pressure at a given location. The unit of measurement is the micro-pascal ( $\mu\text{Pa}$ ) which is the same as micro-newton per square metre ( $\mu\text{N}/\text{m}^2$ ).

1 (26) Sound Pressure Level

The sound pressure level is twenty times the logarithm to the base 10 of the ratio of the pressure of a sound to the reference pressure of 20  $\mu\text{Pa}$ . Unless otherwise specified the effective pressure is to be understood. The unit of measurement is the decibel denoted dB.

1 (27) Vibration

"Vibration" is a temporal and spatial oscillation of displacement, velocity or acceleration in a solid medium.

NPC 102 to NPC 114

In process of preparation

Publication NPC - 115Construction Equipment1. Scope

This Publication refers to sound level limits for various items of construction equipment.

2. Definitions

The technical terms used in this Publication are defined in Publication NPC 101 - Definitions.

3. Sound Level Limits

The Tables list sound level limits for specific items of construction equipment measured according to procedures indicated.

4. Measurements

All measurements of sound to be made in connection with construction equipment shall be made in accordance with Publications 102 and 104 except as otherwise indicated herein.



TABLE 115-1

SOUND LEVEL LIMITS FOR - TRACKED DOZERS, BACK-HOES,  
FRONT END LOADERS, SCRAPERS, GRADERS, OR OTHER  
EXCAVATION EQUIPMENT CAPABLE OF BEING USED FOR SIMILAR APPLICATION

Area of Usage	Date Effective	Sound Level in dBA	Measurement Procedure
Quiet Zones	Jan. 1st, 1976	80	S.A.E. J88
	Jan. 1st, 1980	75	"
Other Zones	Jan. 1st, 1976	90	"
	Jan. 1st, 1980	80	"

TABLE 115-2

SOUND LEVEL LIMITS FOR PORTABLE AIR COMPRESSORS

Area of Usage	Date Effective	Sound Level in dBA at 7m.		Measurement Procedure
		Capacity less than 300 C.F.M.	Capacity greater than 300 C.F.M.	
Quiet Zones	Jan. 1st, 1976	75	75	CAGI-PNEUROP*
	Jan. 1st, 1980	70	70	
Other Zones	Jan. 1st, 1976	87	90	
	Jan. 1st, 1980	75	80	

\* CAGI-PNEUROP Test - Code for the measurement of sound from pneumatic equipment (also known as A.N.S.I.-S.5.1 - 1971)

TABLE 115-3

IMPULSE SOUND LEVEL LIMITS FOR IMPACT PILE DRIVERS

Area of Usage	Date Effective	Impulse Sound Level dBAI at 15m.	Measurement Procedure
Quiet Zones	Jan. 1st, 1976	100	Publication NPC-103
	Jan. 1st, 1978	85	"
Other Zones	Jan. 1st, 1976	100	"
	Jan. 1st, 1978	95	"

TABLE 115-4

SOUND LEVEL LIMITS FOR CRAWLER DRILLS

Area of Usage	Date Effective	Sound Level dBA at 7m.	Measurement Procedure
Quiet Zones	Jan. 1st, 1976	97	CAGI-PNEUROP*
	Jan. 1st, 1978	87	
Other Zones	Jan. 1st, 1976	102	
	Jan. 1st, 1978	92	

\* CAGI-PNEUROP Test - Code for the measurement of sound from pneumatic equipment (also known as A.N.S.I.-S.5.1 - 1971)

TABLE 115-5  
SOUND LEVEL LIMITS FOR PNEUMATIC PAVEMENT BREAKERS AND  
ROCK DRILLS

Area of Usage	Date Effective	Sound Level dBA at 7m	Measurement Procedure
Quiet Zones	Jan. 1st, 1976	80	CAGI-PNEUROP *
	Jan. 1st, 1978	70	
Other Zones	Jan. 1st, 1976	85	
	Jan. 1st, 1978	80	

\* CAGI-PNEUROP Test - Code for the measurement of sound from pneumatic equipment (also known as A.N.S.I.-S.5.1 - 1971)



Publication NPC 116Residential Air Conditioner Sound Level Limits1. Residential Air Conditioners

For the purposes of this publication, the term "residential air conditioner" shall refer only to units with a capacity of 12.3 Kw (42000 BTU/hr) or less, when installed in residential dwellings. For units not included in this definition, reference should be made to Publication NPC 120.

2. Definitions

The technical terms used in the Publication are defined in Publication NPC 101 - Definitions.

3. Sound Level Limits

Table 116.1 lists the maximum permissible sound levels for residential air conditioners as measured at a point of reception.

4. Tonality

Restrictions on the tonality of sound from residential air conditioners shall be as described in Publication NPC 120 - Sound Level Limits, subsections 5 (2), 5 (3) where the maximum permissible sound levels are as determined in subsection (3) above.

5. Measurement Standards

All measurements of sound and noise will be made in accordance with the appropriate methods of Publication NPC 104.

TABLE 116-1

Maximum Permissible Sound Levels, dBA for  
Residential Air Conditioners as Measured  
at the Point of Reception

Equipment Installed Before Date of By-Law	50	
Equipment Installed After Date of By-Law	Date of By-Law to Dec 31st 1976	After Jan 1st. 1977
	47	45

NPC 117 and NPC 118

In process of preparation.

Publication NPC - 119Blasting1. Scope

This Publication refers to limits on concussion (air blast) and ground vibration due to blasting operations.

2. Definitions

The technical terms used in this Publication are defined in Publication NPC 101 - Definitions.

3. Concussion (Air Blast)

The peak overpressure level due to blasting operations shall not exceed 128 dB when measured at any point within 100 metres of any residential premises.

4. Ground Vibration

No ground vibration velocity vector component, due to blasting operations, shall exceed 12 mm/s peak particle velocity, when measured at any point within 100 metres of any residential premises.

5. Measurement Standards

All measurements of concussion (air blast) and vibration shall be made in accordance with Publications NPC 103 and 104.



Publication NPC 120Sound Level Limits1. Scope

This Publication refers to sound level limits and sound pressure level limits.

2. Definition

The technical terms used in this Publication are defined in Publication NPC 101 - Definitions.

3. Table B

Table B to the By-law is to be adapted by the municipality from Table 120-1 hereto. Each description of a type of area appearing in Table 120-1, is to be replaced for the purposes of Table B of the By-law by a designation of those areas of the municipality in which the sound environment is, or is intended to be, comparable to that described.

4. Determination of Sound Level Limit Adjustments4 (1) Steady or Steady-Intermittent Sound

Where a sound is essentially steady or intermittently steady, so that the level may be measured directly with a sound level meter, the maximum permissible sound level during operation of the sound source shall be the level specified in Table B of the By-law plus any allowance due to intermittency of operation as specified in Table 120-2.

#### 4 (2) Random Noise

Where the source produces sound which is neither steady nor intermittently steady, the equivalent sound level due to that source shall not exceed the unadjusted levels set out in Table B of the By-law.

### 5. Sound Pressure Level Limits

#### 5 (1) Application

This section shall apply only to sound which is essentially steady or intermittently steady.

#### 5 (2) Tonality

Table 120-3 lists octave band sound pressure level limits corresponding to the maximum permissible sound level determined in subsection 4 (1).

#### 5 (3) Pure Tones or Narrow Bands of Energy

When sound from a source includes a predominating pure tone or narrow band of energy, then a penalty shall be calculated as follows:

On the basis of one third octave band measurements, the penalty indicated in Table 120-4 is to be added to the measured full octave band sound pressure level in the band in which the pure tone or narrow band of energy is present before applying subsection (2).

#### 5 (4) Beating Sound

When sound from a source includes beats, 5 dB shall be added to the maximum sound pressure level measured in the octave band in which the beat is most pronounced, before applying subsection (2) or (3).

## 6. Measurement Standards

All measurements of sound shall be made in accordance with Publications NPC 103 and 104.

TABLE 120-1  
SOUND LEVEL LIMITS

RESIDENTIAL AREA DESCRIPTION	SOUND LEVEL LIMIT dBA		
	"Night"	"Evening"	"Day"
Residences in sparsely populated area; distant from population centres; environment dominated by natural sounds (people and/or animals).	40	45	45
Semi-rural small community; several miles from major throughway; no industrial or commercial activity.	45	50	50
Small or suburban community; no major through streets; sound environment dominated by distant traffic; recreational activity; occasional train, boat or light aircraft.	48	52	55
Suburban or urban residential community; close to transportation corridor; some commercial or light industrial activity; close to recreational areas; some intrusions due to light aircraft.	50	55	60
Residential community adjacent to busy streets, related to commercial activity, or large industry.	55	60	65

NIGHT: 23:00 - 07:00 hours, all day Sundays and statutory holidays.

EVENING: 19:00 - 23:00 hours

DAY: 07:00 - 19:00 hours

TABLE 120-2

INTERMITTENCY ALLOWANCE WHICH IS TO BE  
ADDED TO THE LEVELS IN TABLE B OF THE BY-LAW TO DETERMINE THE  
MAXIMUM PERMISSIBLE SOUND LEVEL IN dBA

DURATION OF SOUND IN ANY ONE HOUR	ALLOWANCE dBA	
	DAY & EVE. 07:00-23:00 Hrs.	NIGHT 23:00-07:00 Hrs.
30 - 60 Mins.	0	0
10 - 30 Mins.	5	5
4 - 10 Mins.	10	10
1 - 4 Mins.	15	10
Less than 1 Min.	20	10

TABLE 120-3

## OCTAVE BAND SOUND PRESSURE LEVEL dB

Maximum Sound Level dBA	40	45	47	48	50	55	60	65	70	75	80
Octave Band Centre Frequency Hz											
31.5	60	62	64	64	65	69	72	76	79	83	87
63	53	57	59	59	61	65	69	73	76	80	84
125	48	52	54	54	56	61	65	69	73	77	81
250	43	48	50	50	52	57	61	66	70	74	78
500	38	43	45	46	48	53	58	63	67	71	75
1000	33	38	40	41	43	49	54	59	64	68	72
2000	28	34	36	37	39	45	50	56	61	65	69
4000	26	31	33	34	36	42	47	53	58	63	68
8000	26	31	33	34	36	42	47	53	58	63	68
16000	26	31	33	34	36	42	47	53	58	63	68



TABLE 120-4

PENALTY FOR PURE TONES AND/OR NARROW BANDS OF ACOUSTIC ENERGY

CORRECTION TO BE ADDED TO MEASURED OCTAVE BAND  
SOUND PRESSURE LEVEL IN THE OCTAVE BAND CON-  
TAINING THE DISCRETE FREQUENCY OR NARROW BAND  
OF ACOUSTIC ENERGY

	Difference between the sound pressure level (SPL) in the one third octave band containing the pure tone or narrow band of energy and the arithmetic average of the sound pressure levels of the two adjacent one-third octave bands						
	Difference in S.P.L. greater than or equal to (dB)		5	10	15	20	25
	And difference less than (dB)		10	15	20	25	no limit
Correction if pure tone or centre of narrow band greater than or equal to 500 Hz and lower than or equal to 5000 Hz (dB)			5	7	9	11	12
Correction if pure tone or centre of narrow band greater than 5000 Hz or less than 500 Hz (dB)			2	3	4	5	6

Publication NPC 121Sound Within Buildings1. Scope

This Publication refers to sound, audible at a point of reception within a dwelling unit, caused by sound or vibration transmitted through the ground and the structure of the building.

2. Definitions

The technical terms used in this Publication are defined in Publication NPC 101 - Definitions.

3. Sound Pressure Level Limits

Table 121-1 lists the octave band sound pressure levels which shall not be exceeded unless the existing ambient sound pressure levels within the building, in the absence of ground transmitted sound, are in excess of these limits. In such case, the existing ambient sound pressure levels shall be the limits.

4. Impulse Sound

Where the sound is of a repetitive impulse nature, then the limits of Table 121-1 shall refer to the impulse sound pressure levels in the respective octave bands.

5. Measurement Standards

All measurements of sound and noise will be made in accordance with the appropriate methods of Publication NPC 104.

TABLE 121-1

MAXIMUM PERMISSIBLE OCTAVE BAND SOUND PRESSURE LEVELS  
OR IMPULSE SOUND PRESSURE LEVELS IN A DWELLING UNIT DUE  
TO GROUND AND STRUCTURE BORNE SOUND

Octave Band Centre Frequency Hz	31.5	63	125	250	500	1000	2000	4000	8000
Max. Permissible Sound Pressure Level or Impulse Sound Pressure Level dB									
07:00 - 23:00 Hrs	60	49	43	37	31	25	20	18	18
23:00 - 07:00 Hrs	59	46	39	32	26	20	15	13	13

NPC 122 to NPC 130

In process of preparation.





Ontario

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TRAINING PROGRAM 1975-1976  
NOISE CONTROL - ACOUSTIC TECHNOLOGY COURSE

Tel: 965-6993 (4)

1. Introduction

To assist municipalities which have, or contemplate introducing, a noise control program, the Ministry of the Environment is to commence training courses for noise control staff.

Attached is a course description of the Ministry's Noise Control - Acoustic Technology Course (5 parts), which is to be offered in the 1975/76 training program.

The complete schedule for the courses to be held is as follows:

<u>PROGRAM (Capacity)</u>	<u>DATES</u>	<u>ACCEPTANCE DATES</u>
Acoustics Level I (100)	2- 6 Jun. 75 23-27 Jun. 75 5- 9 Jan. 76	By 15 Apr. By 15 Apr. 15 Oct. - 15 Nov.
Acoustics Level II (100)	8-12 Sep. 75 22-26 Sep. 75 26-30 Jan. 76	15 Jun. - 15 Jul. 15 Jun. - 15 Jul. 15 Oct. - 15 Nov.
Acoustics Level III (40)	27-31 Oct. 75 8-12 Mar. 76	15 Jul. - 15 Aug. 15 Dec. - 15 Jan.
Acoustics Level IV (40)	24-28 Nov. 75 22-26 Mar. 76	15 Aug. - 15 Sep. 15 Dec. - 15 Jan.
Acoustics Level V (40)	16-20 Feb. 76 12-16 Apr. 76	15 Nov. - 15 Dec. 15 Jan. - 15 Feb.

2. Priority

Municipality sponsored applicants will receive first priority for acceptance, but they must be designated as the person who is, or will be, responsible for the municipality's noise control program.

3. Application Procedures

An application to attend a course must be submitted by letter from the individual's employer, accompanied by the

registration fee of \$50, made payable to "Training, Certification and Safety Section". The application and fee are to be forwarded to the Registration Secretary, at the address shown on page 1, and the letter will include the following information:

- (a) Course and date (an alternative date also, if possible)
- (b) Full name of applicant and home address
- (c) Address of employment and job title.

#### 4. Acceptance Dates

Applications are now being accepted for the Acoustics Level I Courses to be held 2-6 June and 23-27 June, 1975. The closing date for receipt of applications for these courses is April 15, 1975. Applications for other courses will only be accepted during the period shown in the schedule under "Acceptance Dates".

#### 5. General Information

- (a) All courses will be held in Toronto, and transportation and accommodation arrangements are the individual applicant's responsibility.
- (b) As soon as possible after the closing date, the individual's employer will be notified of the acceptance or rejection of the application. If the course of first choice is oversubscribed and an alternative is available the nominee will be accepted for the alternative course, subject to confirmation by the employer.
- (c) Each accepted nominee will be forwarded an information package, which will include a sketch map showing the training location and nearby hotels; general course information; and pre-course study material.

February, 1975.

## COURSE DESCRIPTION

### NOISE CONTROL - ACOUSTIC TECHNOLOGY COURSE

#### *PURPOSE:*

The acoustic technology course consists of five parts. It is designed to familiarize personnel with the techniques of practical acoustics required to fulfill the obligations of the municipal noise control officer or of other noise control and abatement agencies. Upon successful completion of the appropriate parts of the course, the trainee will be qualified to perform noise control duties at the level indicated by the certificate rank awarded, as follows:

<u>CERTIFICATE</u>	<u>COURSE</u>	<u>COMPETENCY LEVEL</u>
Class 1	Acoustics I and II	Noise Control Investigator
Class 2	Acoustics I,II and III	Assistant Noise Control Officer
Class 3	Acoustics I,II,III,IV&V	Noise Control Officer

#### *SCOPE:*

##### *ACOUSTICS I:*

INTRODUCTORY ACOUSTIC THEORY. LAW. HANDLING OF COMPLAINTS. USE OF SIMPLE SOUND LEVEL METER, OCTAVE BAND ANALYSER AND CALIBRATION TECHNIQUES. MEASUREMENT OF TRAFFIC NOISE AND INDUSTRIAL NOISE. PROCEDURES. REVIEW. EXAMINATION.

##### *ACOUSTICS II:*

REVIEW OF PREVIOUS WORK. ACOUSTIC THEORY. LAW; E.P.A., BY-LAW. COMPLAINT STATISTICS. INVESTIGATIONS, REPORT WRITING. ANSI, ISO AND OTHER STANDARDS. USE OF 1/3 OCTAVE ANALYSER, TAPE RECORDER, IMPULSE SLM. AUDIOMETRICS, PERSONAL HEARING TEST. MORE FIELD WORK. REVIEW. EXAMINATION.

##### *ACOUSTICS III:*

REVIEW OF PREVIOUS WORK. ACOUSTIC THEORY. LAW, STOP ORDERS, CONTROL ORDERS, PROVINCIAL OFFICER'S REPORT, PROSECUTIONS, GRAPHIC ANALYSER, STATISTICAL ANALYSER. VIBRATION ANALYSIS. ADVANCED STATIONARY SOURCE NOISE ANALYSIS. LABORATORY. FIELD WORK. REVIEW. EXAMINATION.

##### *ACOUSTICS IV:*

REVIEW OF PREVIOUS WORK. ADVANCED ACOUSTIC THEORY. USE OF STATISTICAL ANALYSER, WESTERN MONITOR, DOSIMETER, REAL TIME ANALYSER. OFF ROAD AND ROAD SIDE MEASUREMENTS. LOCATION AND ACOUSTICAL EVALUATION AND LEGAL DOCUMENTATION OF TEST SITES. VISITS TO OTHER MINISTRIES CONCERNED WITH NOISE. LAW. ADVANCED PROCEDURES. SELECTION OF INSTRUMENTATION. REVIEW. EXAMINATION.



## ACOUSTICS V:

REVIEW OF PREVIOUS WORK. COMMUNITY NOISE SURVEYS. LAND USE CONCEPTS, NOISE MAPS, NOISE CONTOURS. DIGITAL & STATISTICAL SAMPLING TECHNIQUES. USE OF  $L_{eq}$ ,  $L_{90}$ ,  $L_{dn}$ , N.E.F. AND OTHER INDICES. COMPUTER ANALYSIS OF DATA. FIELD WORK. REVIEW OF LAW, BY-LAW AND PROCEDURES. FINAL EXAMINATION.

### PRE-COURSE FAMILIARIZATION:

Pre-course study material, including a manual, will be provided. When preparing to attend any part of this course, an applicant must complete the pre-course requirements.

### PREREQUISITES:

Courses are to be taken in the order designated. Possession of a valid certificate of a lower rank is a prerequisite for all courses Acoustic II through Acoustic V inclusive. Recognition will be given for prior formal training in acoustics.

Priority will be given to applicants who are:

1. sponsored by a municipality and designated by the municipality to implement its noise control program.
2. professional engineers or environmental officers on M.O.E. regional staffs.
3. other qualified persons sponsored by M.O.E.
4. professional engineers sponsored by a consulting firm specializing in acoustics.

### PASSING GRADE:

Those trainees who achieve a passing grade will be awarded a certificate of competency in acoustic technology in the rank achieved, valid for three calendar years only. The passing grade for all courses will be 60 per cent.

### REGISTRATION FEE:

Upon application, and subject to eligibility and acceptance, for each course, payable to the "Training, Certification and Safety Section". The fee is:

- |  |       |
|--|-------|
| 1. municipal employees                     | \$ 50 |
| 2. M.O.E. employees                        | \$ 50 |
| 3. professional engineers<br>(consultants) | \$150 |













